

CLAIMS

What is claimed is:

1 1. A method for retrieving performance monitor data from a
2 processor, comprising:

3 registering a performance monitoring driver as a private
4 driver with a real time operating system (RTOS) of the processor,
5 wherein the performance monitoring driver is coupled to a
6 performance monitoring unit (PMU);

7 selecting events within the processor to gather data on;

8 sending the selected events as a message request to the RTOS;

9 translating the message request into parameters based on a
10 set of private group parameters that are accessible by the RTOS;

11 sending the message request as a translated request to the PMU;

12 returning the pieces of data requested by the translated
13 request to the performance monitoring driver; and

14 sending the pieces of data to a location specified in the
15 message request.

1 2. The method of claim 1, further comprising:

2 prior to registering the performance monitoring driver,
3 initializing software in memory of the processor.

1 3. The method of claim 1, further comprising:

2 subsequent to registering the performance monitoring driver,
3 initiating a performance monitor application that generates a
4 selection screen at a visual monitor coupled to the processor
5 through a host processor, wherein selecting events within the
6 processor on which to gather data includes selecting the events at

7 the selection screen.

1 4. The method of claim 3, wherein selecting events within
2 the processor on which to gather data includes selecting one of
3 ninety eight events arranged in connection with the selection
4 screen.

1 5. The method of claim 1, wherein sending the selected
2 events as a message request to the real time operating system
3 includes sending the message request through an operating system
4 specific module of a host processor.

1 6. The method of claim 1, wherein sending the translated
2 request to the performance monitoring unit includes sending the
3 translated request through the performance monitoring driver.

1 7. The method of claim 1, wherein the set of private group
2 parameters includes at least one of (i) control parameters for
3 hardware-based performance monitoring resources, (ii) mode-
4 specific control parameters for a performance monitoring resource,
5 and (iii) data parameters for at least one mode in one counter.

1 8. The method of claim 7, wherein the set of private group
2 parameters includes at least one of the following parameters:
3 AdjustedSample, Control, Counter01, Counter02, Counter03,
4 Counter04, Counter05, Counter06, Counter07, Counter08, Counter09,
5 Counter10, Counter11, Counter12, Counter13, Counter14,
6 CurrentMode, CurrTime, EndingTime, Interval, LockControl,
7 MaxAlgorithm, MaxMode, MinSampleInterval, MinSampleUnits, Mode,

8 ModeControl, NumCounters, PerfHWType, SampleInterval, SigmaTime,
9 and Status.

1 9. The method of claim 1, further comprising:
2 subsequent to registering the performance monitoring driver,
3 generating performance monitoring storage tables within memory of
4 the processor.

1 10. The method of claim 9, further comprising:
2 subsequent to returning the pieces of data requested by the
3 translated request to the performance monitoring driver, sending
4 the pieces of data to the performance monitoring storage tables.

1 11. The method of claim 1, wherein sending the pieces of
2 data to a location specified in the message request further
3 includes sending the pieces of data at a time period specified in
4 the message request.

1 12. The method of claim 11, wherein the location specified
2 in the message is a client coupled to the processor through a
3 network.

1 13. The method of claim 11, wherein the location specified
2 in the message is a client coupled to the processor through a host
3 processor.

1 14. The method of claim 11, wherein the location specified
2 in the message is a means for determining whether the server of a
3 host system is too hot based on the pieces of data returned from
4 the performance monitoring unit.

1 15. The method of claim 14, wherein the means for
2 determining is an interpreting device, the method further
3 comprising:

4 generating a message in the interpreting device that causes a
5 fan internal to the host system to turn on in response to the
6 pieces of data returned from the performance monitoring unit.

1 16. In a networking system including a host system having a
2 host processor coupled to an processor through a peripheral
3 components interconnect bus, and including a first client coupled
4 to the host system and a second client coupled to the host system
5 through network lines, a computer readable storage medium
6 containing executable computer program instructions which when
7 executed cause an processor to perform a method comprising:

8 registering a performance monitoring driver as a private
9 driver with a real time operating system of the processor, wherein
10 the performance monitoring driver is coupled to a performance
11 monitoring unit;

12 selecting events within the processor on which to gather
13 data;

14 sending the selected events as a message request to the real
15 time operating system;

16 translating the message request into parameters based on a
17 set of private group parameters that are accessible by the real
18 time operating system;

19 sending the message request as a translated request to the
20 performance monitoring unit;

21 returning the pieces of data requested by the translated
22 request to the performance monitoring driver; and
23 sending the pieces of data to a location specified in the
24 message request.

1 17. The computer readable storage medium of claim 16,
2 wherein the set of private group parameters includes at least one
3 of (i) control parameters for hardware-based performance
4 monitoring resources, (ii) mode-specific control parameters for a
5 performance monitoring resource, and (iii) data parameters for at
6 least one mode in one counter.

1 18. The computer readable storage medium of claim 17, the
2 method further comprising:

3 subsequent to registering the performance monitoring driver,
4 generating performance monitoring storage tables within memory of
5 the processor; and

6 subsequent to returning the pieces of data requested by the
7 translated request to the performance monitoring driver, sending
8 the pieces of data to the performance monitoring storage tables.

1 19. A distributed readable storage medium containing
2 executable computer program instructions which when executed cause
3 an processor to perform a method for retrieving performance
4 monitor data from the processor, the method comprising:

5 registering a performance monitoring driver as a private
6 driver with a real time operating system of the processor, wherein
7 the performance monitoring driver is coupled to a performance
8 monitoring unit;

9 selecting events within the processor on which to gather
10 data;
11 sending the selected events as a message request to the real
12 time operating system;
13 translating the message request into parameters based on a
14 set of private group parameters that are accessible by the real
15 time operating system;
16 sending the message request as a translated request to the
17 performance monitoring unit;
18 returning the pieces of data requested by the translated
19 request to the performance monitoring driver; and
20 sending the pieces of data to a location specified in the
21 message request.

1 20. The distributed readable storage medium of claim 19;
2 wherein the set of private group parameters includes at least one
3 of (i) control parameters for hardware-based performance
4 monitoring resources, (ii) mode-specific control parameters for a
5 performance monitoring resource, and (iii) data parameters for at
6 least one mode in one counter.

1 21. The distributed readable storage medium of claim 20, the
2 method further comprising:

3 subsequent to registering the performance monitoring driver,
4 generating performance monitoring storage tables within the memory
5 of the processor; and

6 subsequent to returning the pieces of data requested by the
7 translated request to the performance monitoring driver, sending

8 the pieces of data to the performance monitoring storage tables.

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